

Claims

1. An electrosurgical system including a generator for generating RF power, and an electrosurgical instrument including at least two electrodes, and an identification
5 element carried by the instrument and being representative of at least the number of electrodes present on the instrument,
the generator comprising:
(i) an RF output stage having at least a pair of RF output lines,
(ii) a power supply coupled to the output stage for supplying power to the
10 output stage,
(iii) a controller capable of varying an RF signal supplied to the RF output lines,
(iv) a switching circuit having at least three output connections, each of at least two of which being in electrical connection with a respective one of the at least
15 two electrodes, and
(v) a sensing circuit adapted to sense the identification element carried by the instrument,
the arrangement being such that the switching circuit operates to connect the RF output lines to two or more of the at least three output connections depending on the
20 identification element carried by the instrument.
2. A system according to claim 1, wherein the identification element is a resistor, and the sensing circuit is adapted to sense the resistance of the identification element.
- 25 3. A system according to claim 1, wherein the identification element is a capacitor, and the sensing circuit is adapted to sense the capacitance of the identification element.
- 30 4. A system according to claim 3, wherein the sensing circuit includes an inductor such as to form a resonant circuit with the identification element, the sensing circuit being adapted to determine the resonant frequency of the resonant circuit so as to identify the identification element.

5. A system according to claim 1, wherein the controller is such as to adjust automatically the RF power supplied to at least one of the three or more output connections to limit the peak generator output voltage to at least a first value when a first combination of electrodes is selected by the switching circuit, and to at least a second value when a second combination of electrodes is selected by the switching circuit.
6. A system according to claim 1, wherein two of the three or more electrodes are in the form of jaws adapted to grasp tissue therebetween.
7. A system according to claim 6, wherein the third electrode is mounted on one of the jaws, separated therefrom by an insulating member.
8. A system according to claim 7, wherein the third electrode is mounted on an external face of one of the jaws.
9. A system according to claim 7, wherein the third electrode is mounted on an internal face of one of the jaws.
10. A system according to claim 7, wherein the third electrode is mounted at the tip of one of the jaws.
11. A system according to claim 1, wherein at least one of the electrodes is in the form of a hook.
12. A system according to claim 11, wherein at least one hook electrode extends distally beyond the other electrodes.
13. A system according to claim 12, wherein there is a centrally-positioned electrode extending distally beyond the other electrodes.

14. A system according to claim 11, wherein at least three of the electrodes are each in the form of a hook.

15. A system according to claim 1, wherein at least one of the electrodes is longitudinally movable such that it can be extended and retracted with respect to the other electrodes.

16. A system according to claim 15, wherein the longitudinally-movable electrode is positioned centrally between the other electrodes.

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17. An electrosurgical system including a generator for generating RF power, and a plurality of electrosurgical instruments, the plurality of electrosurgical instruments including at least one electrosurgical instrument having two electrodes, and at least one electrosurgical instrument having at least three electrodes, each of the plurality of electrosurgical instruments having an identification element carried by the instrument and being representative of at least the number of electrodes present on the instrument, the generator comprising:

(i) an RF output stage having at least a pair of RF output lines,
(ii) a power supply coupled to the output stage for supplying power to the output stage,
(iii) a controller capable of varying an RF signal supplied to the RF output lines,
(iv) a switching circuit having at least three output connections, and
(v) a sensing circuit adapted to sense the identification element carried by the instrument,

the arrangement being such that, when the sensing circuit senses an identification element indicating an electrosurgical instrument having two electrodes, the switching circuit is set to a first mode of operation, and, when the sensing circuit senses an identification element indicating an electrosurgical instrument having at least three electrodes, the switching circuit is set to a second mode of operation.